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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,046	10/31/2003	Andrei Leonov	MERCK-2125 D2	8391
23599	7590	05/28/2004	EXAMINER	
MILLEN, WHITE, ZELANO & BRANIGAN, P.C.			VOLLANO, JEAN F	
2200 CLARENDON BLVD.				
SUITE 1400			ART UNIT	
ARLINGTON, VA 22201			PAPER NUMBER	
			1621	

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/697,046	<b>Applicant(s)</b> LEONOV ET AL.	
	<b>Examiner</b> Jean F. Vollano	<b>Art Unit</b> 1621	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4,5 and 10 is/are allowed.
- 6) ☒ Claim(s) 3 and 6-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/613,293.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/31/03</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Priority***

1. Applicant has place the following : This application is a divisional of U.S. Patent Application Serial No. 10/191,479 filed July 10, 2002, which in turn is a divisional of U.S. Patent Application Serial No. 09/613,293 filed July 10, 2000.

This is appropriate since there is no application data sheet. However the application also needs the current status of all nonprovisional parent applications referenced should be included. The applicant should amend the statement above to include the US Patent numbers for each allowed application.

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-8, and 10, drawn to electrochemical cells or batteries, electrolytes , classified in class 429, subclass various.
- II. Claim 9, drawn to drawn to a process of preparing a sulfonic acid , classified in class 562, subclass various.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of operation. Both group I is drawn to an electrolyte and a electrochemical cell or battery that uses that electrolyte which comprises a lithium boronsulfinate

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a boron and sulfonate ester while group II are drawn to a process for preparing a 2 hydroxy phenyl sulfonic acid and group I which is not used in the electrolyte or the battery. The Groups are found in different classes and there is a burdensome search. Since the Groups are independent there is also patentable distinction.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with James Ruland on May 26, 2004 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-8 and 10. Affirmation of this election must be made by applicant in replying to this Office action. Claim 9 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the

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currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 112***

2. Claims 3, and 6-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3- recites the limitation of the “lithium salt is  $\text{LiPF}_6$ ,  $\text{LiBF}_4$ ,  $\text{LiClO}_4$ ,  $\text{LiA}_5\text{F}_6$ ,  $\text{LiCH}_3\text{SO}_3$ ,  $\text{LiN}(\text{CF}_3\text{SO}_2)_2$  or  $\text{LiC}(\text{CF}_3\text{SO}_2)_3$ .” There are many problems with this limitation. First if the salt is being claimed then it should be  $\text{Li}^+ \text{PF}_6^-$  and  $\text{Li}^+ \text{CF}_3\text{SO}_3^-$  etc wherein there is a charge to indicate that the compound is a salt and the numbers should be subscripts to indicate the number of atom. Second the formula  $\text{LiA}_5\text{F}_6$  does not exist. There is no A element . The formula in the specification is an arsenic salt  $\text{Li}^+ \text{AsF}_6^-$ . This could be what is being claimed. Also the formula  $\text{LiN}(\text{CF}_3\text{SO}_2)_2$  seems to be chemically incorrect. The  $\text{CF}_3\text{-S(O)(O)}$  appears to be missing a terminal group . IF the compound is a sulfone then there should be two attachments to the sulfone. The subscript 2 at the end of the parentheses is also confusing since it doesn't seem to have a charge to balance one  $\text{Li}^+$ . Also the same applies to the  $\text{LiC}(\text{CF}_3\text{SO}_2)_3$  as far as the terminal group of  $\text{SO}_2$ . The claim is confusing as written. Please clarify and change any incorrect formulas.

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Claim 6 recites a formula which has a formula of  $[(R^{1''}(CR^{2''}R^{3''})_k)_lA_x)_yKt]^+$  followed by a  $N(CF_3)_2$ . There seems to be a negative charge on the N but it is unclear. Also the Rs can all be hydrogen and with no specific number relationship one of the formulas claim is  $[(H(CH_2)_0)_1N_1)S]$  which would be HNS which is not an ion. There is no relationship given to the groups which make them clear as to what the subscripts should be in certain instances. The claim is confusing as to what exactly are the metes and bounds of the instant invention. The same kind of problem is in claim 7. Also in claim 7 there appears to be an m which has  $m=0$  that seems to be crossed out with a circle around it. The claim is also confusing as to what is being claimed.

Claim 8 recites x/y in the formula. It is unclear what that is suppose to represent. Also can X be 2 and Y be 6. It doesn't appear so and so the metes and bounds of the relationship are confusing.

3. The specification is objected to for the following reasons the  $LiN(CF_3SO_2)_2$  or  $LiC(CF_3SO_2)_3$  does not seem to be correct as far as the formula is given.

4. Claims 1-2, 4-5 and 10 are allowed. The prior art (US 6,203,949, US 6,599,664, and US 6,558,850) teach electrolytes and cells which have a lithium sulfonate borate. But the compound is a bis compound and not the compound found in the instant claim.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean F. Vollano whose telephone number is 571-2720648. The examiner can normally be reached on Monday-Thursday 6:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272- 0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jean F. Vollano  
Primary Examiner  
Art Unit 1621

May 26, 2004